

Aneroid Determinations.

On June 13, 1904, Governor Bolton provided me with two first class aneroid barometers, reading up to 20,000 feet without adjustment. These two instruments were set at ^{zero}(0) at mean tide-water, at Tagulaya, at ⁶ o'clock A.M., June 15, 1904.

One instrument was given over to the charge of Señor [unclear], who recorded readings at 8 A.M., 12 M., and 4 P.M., daily from June 15, 1904, at 8 A.M. to June 23, 1904, at 8 A.M. ^{at Tagulaya, on the shore of the Gulf of Davao.} All time pieces used were corrected and set together at 7 A.M. June 15, 1904. All were ordinary watches, which varied so little during the period of the observations that no correction was considered necessary. Señor [unclear] check aneroid readings are attached hereto.

Mount Apo Aneroid Readings.

	Date	Hour	Feet.
Yagulaya, at mean tide-water, Gulf of Davao	June 15, 1904	6 A.M.	0000
" " " "	"	"	0000
Upper edge of conical, Mt. Apo trail	June 15, 1904	at 9:45 A.M.	1030
Branch of Yagulaya River, "	"	9:55 A.M.	930
Yoncahling	"	12:00 M.	1550.
House of sub-Datto where we turned down to the River	June 16, 1904	A.M.	1725
At the River		do	1300
Where we left the River		do	1660
Todaya (house where we slept)		P.M.	3350
Todaya	do —	June 17, 1904, at 7:00 A.M.	3350
Highest cultivated fields above Todaya	do	A.M.	3500
Top of hill behind Datto Mungah's house	do	A.M.	3750
Thermal Spring		do	11:00 A.M. 4050
Reading on hillside		do	12:15 P.M. 4750
" above the little flat		do	P.M. 5260
Creek Crossing (water very cold)		do	P.M. 5275
Dr. Copeland's shack at Camp Goodfellow		do	1:40 P.M. 5600
Camp Goodfellow, June 22, 1904, at		7:00 A.M.	5700
Sulphur Vents	"		7540
Highest trap (to right of crevasse)	June 22, 1904.		7750
Bulk of high traps, near Sulphur Vent	June 26, 1904		7600
Second Sulphur Vent	"		8100
Camp Goodfellow	"	2 P.M.	5830

Aneroid Readings, June 28, 1904:-

Camp Goodfellow, 6:45 A.M. 5710 feet
" " 6:00 P.M. 5900 "

Trap-box 7:15 A.M. 6200 "

Headquarters of Goodfellowia miranda (shot). 6250 "

Spas and canyon, 7:40 A.M. 6575 "

Divide's Rest, above steep rocks, 8:30 A.M. 7240 "

" 4:00 P.M. 7400 "

^{or "Brick}
Silex Tablet 8:45 A.M. 7450 "

" 3:00 P.M. 7700 "

Small boulder, fine view^{of Davao}, 8100 "

Small steam-vent in trail 8800 "

E. Peak (shoulder) of Apo 10:00 A.M. 8900 "

" ? P.M. 9000 "

On arrival at monument and bottle, exactly same 9500 "

Same observation as above 10:45 A.M. 9500 "

Middle or main peak ~~12:00 M.~~ observation 9500 "

Laguna in Apo crater 12:00 M. 9250 "

Top of recent slide scar, on leaving peaks 9500 "

[Dr. C. B. Copeland's aneroid, April 20, 1904, 9080 "

(On April 23, 1904, he noted: "Barometer dropped while here from 9320 to 9500.]

Aneroid Readings. June 30, 1904.

By Fletcher L. Keller.

Camp Goodfellow

	Hour.	Feet.
	5:00 A.M.	5940
	2:20 P.M.	6075
	7:15 A.M.	7425
	12:30 P.M.	7450
	7:40 A.M.	7650
	12:00 M.	7750
	10:00 A.M.	9050
	about noon ^{1:30}	7900

Aneroid Readings,
July 1, 1904.

Camp Goodfellow

" " Canyon and ~~lava~~ traps

Guide's Rest

" "

Sablet

East Peak

" " (returning)

Main Peak

" " Crater Lake

~~N. Peak~~ Crater Lake

(The little rocky peak at n. extremity where
North Peak left record is 10 feet lower). 11:45 A.M. 9700

Middle Peak has 4 rocky hummocks:

E. Point, nearest N. Peak

W. Point, close by

Middle Peak

SE. Point } next to the crater pool

SW. Point }

West Main Peak

<u>Time.</u>	<u>Feet.</u>
6:30 A.M.	5940
6: P.M.	5940
8: A.M.	6800
9: A.M.	7425
4:15 P.M.	7525
9:15 A.M.	7700
3:15 P.M.	7815
10:15 A.M.	9080
mo. ?	9160
11:15 A.M.	9640
2: P.M.	9700
1: P.M.	9400
1:45 P.M.	9450
12:11 P.M.	9675
12:15 P.M.	9700
12:17 P.M.	9710
12:21 P.M.	9675
12:25 P.M.	9610
12:38 P.M.	9655

Aneroid Readings,
July 5, 1904.

	<u>Hour</u>	<u>feet.</u>
Sum Goodfellowia miranda	7:00 A.M.	6300
Foot of Canyon and traps	7:30 A.M.	6700
Guide's Rest	8:15 A.M.	7350
Tablet	9:20 A.M.	7650
E. Spur of East Peak	10:45 A.M.	9025
East Peak	2:00 P.M.	9700
Valley between Middle and North peaks	4:00 P.M.	9650
Crater Lagoon	5:15 P.M.	9450
Apex (highest one) of Middle Peak (Sun sets)	5:45 P.M.	9775
July 6, 1904.		
Camp at notch	5:30 A.M.	9740
W ("N") Peak at	6:00 A.M.	9825
Notch (camp)	7:00 A.M.	9720
East Peak summit	7:20 A.M.	9800
East Spur of East Peak	8:30 A.M.	9220
Tablet	9:20 A.M.	7880
Guide's Rest	9:45 A.M.	7540
Foot of Canyon and traps	10:15 A.M.	6900
Camp Goodfellow	12: M.	5960

July 8, 1904. — Aneroid at 5:30 A.M. 6000 ft.

Thermometer	" 5:30 A.M.	52° F.
Aneroid barometer	" 12 M	6000 ft.
Thermometer at	" 12 M	67° F.
Aneroid barometer	" 2 P.M.	6050 ft.
Thermometer	" 2 P.M.	66° F.
Aneroid barometer	" 5 P.M.	6050 ft.
" "	" 6 P.M.	6025 ft.
Thermometer	" 6 P.M.	58° F.
"	" 10 P.M.	6000 ft.

July 9, 1904. — Aneroid at 3 A.M. 3000 ft.

Thermometer	" 3 A.M.	54° F.
Aneroid barometer	" 6 A.M.	6000 ft.
Thermometer at	" 6 A.M.	53° F.
Aneroid barometer	" 12 M	6000 ft.
Thermometer (shade)	" 12 M	67° F.
Thermometer (sun)	" 12 M	84° F.
Thermometer	" 7:15 P.M.	55° F.
Aneroid barometer	" 6:00 P.M.	6050 ft.

Datto Mung'-uh came up to Camp Goodfellow with his men to move us down to Fo-dy'-uh to-morrow.

Mount Apo Aneroid Readings.

Camp Goodfellow.	July, 2, 1904,	at	3:00 P.M.	5950
"	" 3,	" , "	8:00 A.M.	5875
"	" 3,	" , "	6:00 P.M.	5930
"	" 7,	" , "	6:00 A.M.	6000
"	" 7,	" , "	12:00 M.	6000
"	" 7,	" , "	9:30 P.M.	5900
"	" 8,	" , "	5:30 A.M.	6000
"	" 8,	" , "	12:00 M.	6000
"	" 8,	" , "	2:00 P.M.	6050
"	" 8,	" , "	5:00 P.M.	6050
"	" 8,	" , "	6:00 P.M.	6025
"	" 8,	" , "	10:00 P.M.	6000
"	" 9,	" , "	3:00 A.M.	6000
"	" 9,	" , "	6:00 A.M.	6000
"	" 9,	" , "	12:00 M.	6000
"	" 9,	" , "	6:00 P.M.	6050
"	" 10,	" , "	6:00 A.M.	6000

1st Crossing of See-ree'-bahn River, " 7:40 A.M. 5650
 2nd " " " " " 10:05 A.M. 5275

The tree-trunks lose their heavy coating of moss at 5000
 " At 9:20 A.M. crossed the See-ree'-bahn Aneroid 4350
 " ^{See-ree'-bahn} ^{Different from above}

Top of hill back of Datto Mung-ah's house, at 10:50 A.M. 4225

Foot of Todaya Hill 11:40 A.M. 3550

Mount Apo Aneroid Readings.

Datto Munguh's house at Todaaya	at 12:00 P.M.	July 10, 1904	3875
" "	" July 10, 1904, 6:30 P.M.	3850	
" "	" do July 11, 1904, 9:00 A.M.	3700	
" "	" do July 11, 1904, at 6:00 ^{7:30} P.M.	3800	
" "	" do July 12, 1904, at 6:30 A.M.	3780	
" "	" do July 12, 1904, at 6:00 P.M.	3800	
" "	" do July 13, 1904, at 6:00 A.M.	3800	
Lower house of Todaaya Village	" 13, " 7:20 A.M.	3000	
Soo-boo-ahn River	" 13, " 8:15 A.M.	2050	
Sal-oo-h-soo'-ahn River	" 13, " 8:30 A.M.	2025	
do on leaving	" 13, " 9:50 A.M.	1730	
Old Practico's house at top of hill	" 13, " ? A.M.	2140	
Toon calling, Datto Ali's house	" 13, " 10:45 A.M.	2000	
Behr-ah-euh'-ton River	" 13, " 1:45 P.M.	1400	
Top of hill at point of eogonal	" 13, " 2:20 P.M.	1520	
Tagulaya (mountain aneroid)	" 13, " 4:30 P.M.	480	
" check	" 13, " 4:30 P.M.	150	
" mountain	" 13, " 10:00 P.M.	325	
" check	" 13, " 10:00 P.M.	80	
" mountain	" 14, " 6:00 P.M.	350	
" check	" 14, " 6:00 P.M.	100	
" mountain	" 15, " 7:00 A.M.	300	
" check	" 15, " 12:00 ^{7:00} P.M.	140	

Mount Apo Aneroid Readings.

Tagulaya ^{July 15, 1904.} Mountain aneroid at 12:00 m. 375

" July 15, 1904. Check " " 12:00 m. 140

1904
June
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Thermometer readings on Mount Apo.

Datto Mungah's house at Todaya,	July 11, 1904	at 5:00 A.M.	71
do	July 12, 1904	9:00 A.M.	80
do	Jue., 11, 1904,	6:00 P.M.	78
do	July 11, 1904,	7:30 P.M.	78
do	July 12, 1904,	6:30 A.M.	65
do	July 12, 1904,	6:00 P.M.	71
do	July 13, 1904,	6:00 A.M.	65
Lowerthouse of Todaya Village	" 13, "	, 7:20 A.M.	74
Soo-bu-ahn River	" 13, "	, 8:15 A.M.	76
do	water	13 " , 8:20 A.M.	<u>lost</u>
End of trail in bahr ^{River} Canyon of Sal-ooh-soo	13 "	, 9:50 A.M.	{ air water 79
do		13 " , 9:50 A.M.	{ 69
Datto Ali's house at Yonneahling	" 13 "	, 10:45 A.M.	83
Bahr-ah-eh'-ton River	" 13 "	, 1:45 P.M.	83
Tagulaya	" 13 "	4:30 P.M.	84
"	" 13 "	10:00 P.M.	78
"	" 14 "	6:00 P.M.	82
"	" 15 "	7:00 A.M.	75
"	" 15 "	12:00 M.	83

Thermometric readings on Mount Apo.

July 1, 1904, 6 P.M. = 62°

" 2, " , 5:30 A.M. = 51

" 2, " , 12 M. = 64

" 2, " , 6 P.M. = 62

" 2, " , 10:30 P.M. = 54

" 3, " , 5:50 A.M. = 54

" 3, " , 12 M. = 64

" 3, " , 6 P.M. = 63

" 3, " , 9:15 P.M. = 56

" 3, " , 11:15 P.M. = 55

" 4 " , 12:02 A.M. = 54

" 4 " , 6:00 A.M. = 49

" 4 " , 8:30 A.M. = 57

" 4 " , 12 M. = 64

" 4 " , 3 P.M. = 65½

" 4 " , 6 P.M. = 59½

" 4 " , 8:30 P.M. = 58

" 5 " , 12:01 A.M. = 55

" 5 " , 6 A.M. = 52

" 6 " , 6 P.M. = 62

" 7 " , 12:01 A.M. = 54

" 7 " , 5 A.M. = 53

" 7 " , 6:00 P.M. = 59

" 7 " , 9:30 P.M. = 57

July 4, 1904. Shade temperature

of See-ree-boon River water 64

of spring water at camp Goodfellow 57½

July 8, 1904, 5:30 A.M. 52

" 8, " , 12:00 M. 67

" 8, " , 2:00 P.M. 66

" 9, " , 3:00 A.M. 54

" 9, " , 6:00 A.M. 53

" 9, " , 12:00 M (shade) 67

" 9, " , 12:00 M (sun) 84

" 9, " , 7:15 P.M. 55

" 10, " , 6:00 ^{Just before 9:00 A.M.} M. 51

" 10, " Water of thermal spring 120+ ^{Just before 9:00 A.M.}

" 10, " " Tahui'-bo River 70 ^{Just before 9:00 A.M.}

" 10, " Air temperature at thermal ^{Just before 9:00 A.M.} 69

" 10, " Water crossing Tahui'-bo River 71 ^{Just before 9:00 A.M.}

" 10, " At 9:20 A.M. crossed the See-ree'-
boon River, the water having the temperature 65

" 10, " Top of hill back of Datto Mingah's
house at 10:50 A.M. 76

" 10, " Foot of Indaya Hill 11:40 A.M. 80

" 10, " Datto Mingah's 12: M. 83

" 10, " " " 6:30 P.M. 71

" 10, " " " 7:30 P.M. 68

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Mount Apo Thermometer Readings. Degrees,
July 5, 1904:— Hour. Fahrenheit.

Canyon and traps	7:45 A.M.	64
Tablet	9:20 A.M.	70
East Spur of East Peak	10:45 A.M.	62
East Peak	2:00 P.M.	57
Notch Between North and Middle Peaks	4:00 P.M.	52
West Peak	5:00 P.M.	50
Air temperature at Crater Lagoon	5:13 P.M.	49
Water temperature of Crater Lagoon	5:23 P.M.	54
Highest point of Middle Peak	5:45 P.M.	45
Camp in notch	6:00 P.M.	46
do	7:00 P.M.	44

July 6, 1904:—

do	12:00 midnight	73
do	3:00 A.M.	42
do	5:00 A.M.	41
do	5:30 A.M.	44
Summit of West Peak	6:00 A.M.	48
Air temperature at camp (shade)	6:30 A.M.	48
Water temperature at camp (20 minutes)	6:55 A.M.	47
East Peak	7:20 A.M.	50
East Spur of East Peak	8:30 A.M.	55
Tablet	9:20 A.M.	61
Guide's Rest	9:45 A.M.	64
Foot of Canyon and traps	10:15 A.M.	75

ABSTRACT OF MEDICAL PROPERTY—Continued.

3-III

ADDITIONAL ARTICLES.

FROM PAGE
TOTAL, CARRIED FORWARD

NO. VOUCHERS

TOTAL.

20

1st
 Feb. 22nd 1888. Otto Koch and Dr. F. W. Schawenborg
 2^d Feb. 14th 1888. L Park.
 3^d June 20 1905 Chas. O Thomas Jr. 1st Lieut. U. S. Vol. Inf.
 " " " A. P. Whitmarsh,
 4th May 1933 G. L. Hoover Lincoln Neb.
 " " B. F. Devore Marysville, Calif.
 " " 20th 1878 A. B. Copeland Sierra Club of San Francisco
 Bureau of Geol. Manila, record reading 1000 ft
 visited known crests & built monuments on them
 forecast. 1505 of 2000 ft.
 April 23rd had a car accident, then can't
 see 200 ft. Diameter drift wheel from 9 to 1000 ft.
 June 28 1924 record reading 1500 ft. exactly 3 ft. above
 plateau of 1000 ft. from 1000 ft.

ARTICLES.

**TOTAL CARRIED FORWARD
FROM PAGE**

MEDICINES—Continued.

Sinapis nigra (pulvis), in 500-gm. tins ----- tins.	
Sodii bicarbonas, in 500-gm. bottles----- botts.	
Sodii carbonas, 324-mgmn. tablets (200 in bottle), for field use only ----- botts.	
Sodii bicarb. et menthae pip. (tablets), (250 in bottle)----- botts.	
Sodii boras (pulvis), in 500-gm. bottles----- botts.	
Sodii bromidum, in 250-gm. bottles----- botts.	
Sodii hypostrophus, in 250-gm. bottles----- botts.	
Sodii phosphas, in 160-gm. bottles----- botts.	
Sodii salicylas, in 500-gm. bottles----- botts.	
Sodii salicylas, 324-mgmn. tablets (200 in bottle)----- botts.	
Strophanthi tintura, in 160-c. c. bottles----- botts.	
Sulphur lotum, in 250-gm. bottles----- botts.	
Terebenum, in 250-c. c. bottles----- botts.	
Thymol, in 25-gm. bottles----- botts.	
Tolutanum balsanum, in 250 gm. tins----- tins.	
Valeriane extractum fluidum, in 250-c. c. bottles----- botts.	
Veratri viridis tintura, in 100 c. c. bottles-botts.	
Zinci oxidum, in 250-gm. bottles----- botts.	
Antiseptic tablets (200 in bottle)----- botts.	
Iron sulphate, commercial, in 10-kilo, boxes-boxes.	
Lime, chloride, in 500 gm. w. m. bottles----- botts.	
Mercury, corrosive chloride, in 500-gm. botts. botts.	
Soda, chlorinated solution (6 per cent available chlorine), in 1-liter bottles----- botts.	
Sulphur, in roll----- kilos.	
Tricresol, in 1-kilo. bottles----- botts.	
HOSPITAL STORES.	
Agar-agar, in 500 gm. packages----- pkgs.	
Brandy, in 1-liter bottles----- botts.	
Soap, Castile or its equivalent----- kilos.	
Soap, common----- kilos.	
Sugar, white, in 6-kilo. tins----- tins.	
Whisky, in 4-liter-bottles----- botts.	
MICROSCOPICAL ACCESSORIES.	
Beef extract, in 100-gm. tins or jars----- tins.	
Alcohol, absolute, in 250-c. c. g. s. bottles----- botts.	
Aniline oil, in 125-c. c. bottles----- botts.	
Balsam bottle----- no.	
Bismarck brown, in 4 gm. bottles----- botts.	
Canada balsam, in 30-c. c. bottles----- botts.	
Carmine, in 15-gm. bottles----- botts.	
Eosin, in 15-gm. bottles----- botts.	
Fuchsin, in 15-gm. bottles----- botts.	
Gelatin, in 60-gm. packages----- pkgs.	
Gentian violet, in 15-gm. bottles----- botts.	
Glass covers, 16 or 19 mm. square----- gms.	
Glass slides, 25x 75 mm.----- doz.	
Hematoxylin, in 8 gm. bottles----- botts.	
Methylene blue, in 15-gm. bottles----- botts.	
Oil of cedar, in 30-c. c. bottles----- botts.	
Paraffin, in 250-gm. cakes----- cakes.	
Xylenum, in 250-c. c. bottles----- botts.	
STATIONERY.	
Baskets, filter----- no.	
Buckets, waste-paper----- no.	
Blank books, cap, 4 quire----- no.	
Blank books, Sino, 4 quire----- no.	

Collected 8.15 a.m. May 26 '06.

Stan. Mr. Bliss 12, 00^m. June 1, 06.

End	to water level	ft. above
0m	30	4100
10m	60	3900
5m	70	3800
10m	40	3600
0m	80	3550
10m	40	3450
10m	70	3300
5m	100	3200
15m	60	3300
5m	340	3400
5m	30	3500
10m	70	3700
15m	80	3900
20m	340	4000
10m	80	4550
20m	60	4900
15m	270	4700
5m	270	4600
30	340	4800
30	360	3800

Date of Bridge.

Descending from highest point of bridge
to lowest point of bridge.

Descending to Matimbaus River
Bridge, with Nephew and wife
into Coonj. River 50-75' lower
than 550 m. and first annual
flood lot.

20m	85°	3950	Forest opening, 10-15 ft. wide.
10m	710	4050	" " "
10m	710	4200	" " "
5m	760	4250	" " "
10m	760	4350	" Forest opening, open.
3m	850	4400	" " 8m.
5m	770	4450	" " "
10m	850	4500	great deciduous.
10m	770	4550	Pebbley form 270°
15m	850	4650	" " "
10m	770	4750	" " "
10m	760	4850	" " "
10m	850	4900	Forest opening, Mal. 8. 300°
10m	760	4950	Pebbley, anterior Mal. 9. 200° or 30° fall.
10m	770	5050	Wetland 30° - 100% wet.
10m	860	5700	Shrub 30° - 100% wet fall.
10m	770	5200	" " " 100% wet.
10m	800	5250	" " " 100% wet.
10m	810	5300	In all habitats & from 60°
10m	800	5400	" " "
5m	770	5450	Small " in 30° slope.
5m	820	5500	Salmon colored rock slopes, 30% 50%.
15m	830	5600	Bushy Creek, 10-15 ft. wide.
10m	840	5700	" " " 100% wet, 100% slope.

(67)

Time	Compass bearing	Remarks.
20m	8° 07'	5' 40' Reefs on shore over which a canal may.
15m.	3° 50'	6' 30' Climbing Reefs 100 fathoms or more.
5m.	8° 11'	6' 100' Much white sand. The water very shallow.

Shallow water off. Edge. Jan 24. 03. 7 am.

20m.	3° 40'	Climacter Reefs near shore & 100' into average rate of 1000' in 5 min.
5h. 10m.	3° 60'	Changed on summit. Elevation according observations by R. C. with local Climacter from 400 fathoms to the Micronesian flats. 9200 feet.

Geographie

May 27.

W. C. L. 1912

Elev 6750'

Camped - Meadow Lake

May 27 1900 105° + 65° 6 miles

Cloudy - cool

May 28 1900 105° + 65°

Wet - cloudy

May 29 1900 105° + 65° 6 miles

Cloudy - cool

May 30 1900 105° + 65° 6 miles

Cloudy - cool - dry way.

Cloudy - cool - dry way.

Cloudy - cool - dry way.

May 31 1900 105° - 20° about 50 miles.

Cloudy - cool - dry way.

June 1. 1900 94° + 0.55° 5 miles

Cloudy - cool - dry way.

Mr Bliss

June 2. 1900 102° - 6° 5 miles

Cloudy - cool - dry way.

June 4. 1900 170 - 6° 50 7 miles

2

June 1, 1903 9 a.m.	at white pine tree
	Rainbow
June 16 - 17	5 miles
	East Hill.
June 23 80° - 10°	50 miles
	and others
June 25 80° - 8°	16 miles
	near Mountain Man's
June 26 80° - 9°	5 miles
	also at
72° - 7.8°	5 miles
	at
76° - 7.8°	5 miles
	all spruce
126° - 7.8°	4 miles
	at
	Mat Tip Mountain
80° - 10°	8 miles
	at
	Mat Tip Mountain
350° - 8°	8 miles
	at
	West Ridge
16° - 3°	8 miles
	at
	West Ridge
216° - 8°	8 miles
	at
	West
240° - 8.2°	8 miles
	at

Date August 21st 1888. Estimated Distance.
112 miles.

Lat. 43° 25' N. Long. 90° 55' W., res 78°

Traveling from Fort Atkinson to York
3850 ft. 50 20 m. 12

For members of The meteorological Association.

Date | Time | Therm. | Barometer.
also Wind & Tide.

June 6. 06	8 am.	60	6950.
	12 m.	62.	6100.
	6 P.M.	60.	6075.
June 7. 06	8 am.	60	6075.
	12 m.	63.	6100.
	6 P.M.	60	6075.
June 8. 06	6 am.	57.	6100.

Min. 56°

June 8. 06	6 am.	70°	6750.
June 9. 06	12 m.	69°	6700.
June.	6 P.M.	70°	6820.

0°C at 40° latitude.

June 9. 06	6 am.	77.	1160.
June 10. 06	6 am.	78	1100.
	12 m.	82	1150.
	6 P.M.	78	1175.
June 11.	6 am.	72	1100.

0°C at 30° latitude 25° E. long.

June 11.	12 m.	84	50
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Missouri (Lat. 40° E. long.)

June 11.	6 P.M.	84	120
June 12.	6 am.	75	30
	12 m.	89	70.
June 13.	6 am.	75	35.

Latitude, 30° E. long. 25.